Quick Guide

For printer model:

GY412

PN: 9001246(B)

Read this Quick Guide before using this product.
Keep this document available for future reference.

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The content of this document may be changed without prior notice.

Great care has been taken in the preparation of this document. If any problems, mistakes, or omissions are found, please contact your SATO reseller or technical support center.

FCC Statement

The printer complies with the requirements in Part 15 of FCC Rules for a Class B Computing Device. Operating the printer in a residential area may cause unacceptable interference to radio and TV reception. If the interference is unacceptable, you can reposition the equipment, which may improve reception.

Safety Precautions

Please read the following information carefully before installing and using the printer.

Pictographic Symbols

This instruction manual and the printer labels use a variety of pictographic symbols to facilitate safe and correct use of the printer and to prevent injury to others and property damage. The symbols and meanings for them are given below. Be sure to understand these symbols well before reading the main text.

Warning	Ignoring the instructions marked by this symbol and erroneously operating the printer could result in death or serious injury.
Caution	Ignoring the instructions marked by this symbol and erroneously operating the printer could result in injury or property damage.

Example Pictographs

The △ pictograph means "Caution is required." A specific warning symbol is contained inside this pictograph (The symbol at left is for electric shock).

The ⃠ pictograph means "Should not be done." What is specifically prohibited is contained in or near the pictograph (The symbol at left means "Disassembly prohibited").

The ● pictograph means "Must be done." What is specifically to be done is contained in the pictograph (The symbol at left means "Unplug the power cord from the outlet").

⚠ Warning

Do not set on an unstable area

- Do not set on an unstable area, such as a wobbly table or slanted area or an area subject to strong vibration. If the printer falls off or topples over, it could injure someone.

Do not place containers full of water or other liquid on the printer

- Do not place flower vases, cups, or other containers holding liquids, such as water or chemicals, or small metal objects near the printer. If they are spilled and get inside the printer, immediately turn off the power switch, unplug the power cord from the outlet, and contact your SATO reseller or technical support center. Using the printer in this condition could cause a fire or electric shock.

Do not put objects inside the printer

- Do not insert or drop in metal or burnable objects inside the printer's openings (cable outlets, etc.). If foreign objects do get inside the printer, immediately turn off the power switch, unplug the power cord from the outlet, and contact your SATO reseller or technical support center. Using the printer in this condition could cause a fire or electric shock.

Do not use other than the specified voltage

- Do not use other than the specified voltage. Doing so could result in fire or electric shock.

Always ground the connections

- Always connect the printer's ground wire to a ground. Not grounding the ground wire could result in electric shock.

Handling of the power cord

- Do not damage, break, or modify the power cord. Also, do not place heavy objects on the power cord, heat it, or pull it because doing so could damage the power cord and cause a fire or electric shock.
- If the power cord becomes damaged (core is exposed, wires broken, etc.), contact your SATO reseller or technical support center. Using the power cord in this condition could cause a fire or electric shock.
- Do not modify, excessively bend, twist, or pull the power cord. Using the power cord in such a condition could cause a fire or electric shock.

When the printer has been dropped or broken

- If the printer is dropped or broken, immediately turn off the power switch, unplug the power cord from the outlet, and contact your SATO reseller or technical support center. Using the printer in this condition could cause a fire or electric shock.

Do not use the printer when something is abnormal about it

- Continuing to use the printer in the event something is abnormal about it, such as smoke or unusual smells coming from it, could result in fire or electric shock. Immediately turn off the power switch, unplug the power cord from the outlet, and contact your SATO reseller or technical support center for repairs. It is dangerous for the customer to try to repair it, so absolutely do not attempt repairs on your own.

Do not disassemble the printer

- Do not disassemble or modify the printer. Doing so could result in fire or electric shock. Ask your SATO reseller or technical support center to conduct internal inspections, adjustments, and repairs.

Regarding the cutter

- Do not touch the cutter with your hands or do not put something into the cutter. Doing so could result in an injury.

Using the head cleaning fluid

- Use of flame or heat around the head cleaning fluid is prohibited. Absolutely do not heat it or subject it to flames.
- Keep the fluid out of reach of children to prevent them from accidentally drinking it. If the fluid is drunk, immediately consult with a physician.

⚠ Caution

Do not place in areas with high humidity

• Do not place the printer in areas with high humidity or where condensation forms. If condensation forms, immediately turn off the power switch and do not use the printer until it dries. Using the printer while condensation is on it could result in electric shock.

Carrying the Printer

• When moving the printer, always unplug the power cord from the outlet and check to make sure all external wires are disconnected before moving it. Moving the printer with the wires still connected could damage the cords or connecting wires and result in a fire or electrical shock.

• Do not carry the printer with paper loaded in it. The paper could fall out and cause an injury.

• When setting the printer on the floor or a stand, make sure not to get your fingers or hands pinched under the printer feet.

Power supply

• Do not operate the power switch or plug in/unplug the power cord with wet hands. Doing so could result in electric shock.

Power cord

• Keep the power cord away from hot devices. Getting the power cord close to hot devices could cause the cord's covering to melt and cause a fire or electrical shock.

• When unplugging the power cord from the outlet, be sure to hold it by the plug. Pulling it by the cord could expose or break the cord wires and cause a fire or electric shock.

• The power cord set that comes with the printer is especially made for this printer. Do not use it with any other electrical devices.

Top cover

• Be careful not to get your fingers pinched when opening or closing the top cover. Also be careful the top cover does not slip off and drop.

Print head

• The print head is hot after printing. Be careful not to get burned when replacing paper or cleaning immediately after printing.

• Touching the edge of the print head immediately after printing could result in injury. Use caution when replacing the label or when cleaning the print head. You should not replace the print head without having received the proper training.

Loading paper

• When loading roll paper, be careful not to get your fingers pinched between the paper roll and the supply unit.

When not using the printer for a long time

• When not using the printer for a long time, unplug the power cord from the outlet to maintain safety.

During maintenance and cleaning

• When maintaining and cleaning the printer, unplug the power cord from the outlet to maintain safety.

Precautions for Installation and Handling

Printer operation can be affected by the printer environment.
Refer to the following instructions for installation and handling of the printer.

Select a Safe Location

Place the printer on a surface that is flat and level.

If the surface is not flat and level, this may result in poor print quality. This may also cause malfunction and shorten the life span of the printer.

Do not place the printer on a location that produces vibration.

Do not carry the printer when the roll label is set. Vibrating the printer may cause malfunction and shorten the life span of the printer.

Keep the printer out of high temperature and humidity.

Avoid locations subject to extreme or rapid changes in temperature or humidity.

Do not place the printer in a location subject to water or oil.

Do not place the printer in a location where it will be splashed with water or oil. Water or oil in the printer may cause a fire, electric shock, or malfunction.

Avoid dust.

Dust build up may result in poor print quality. This may cause not only malfunction but also shorten the life span of the printer.

Keep out of direct sunlight.

This printer has a built-in optical sensor. Exposure to direct sunlight will make the sensor less responsive and may cause the label to be sensed incorrectly. Close the top cover when printing.

Power Supply

This printer requires an AC power supply.

Be sure to connect the printer to an AC power supply via the supplied AC adapter. Failure to do so may result in malfunction.

Connect the power cord to a grounded power outlet.

Make sure that the printer is plugged into a grounded power outlet.

Provide a stable source of electricity to the printer.

Do not share the power outlets with other appliances such as a heater and refrigerator requiring a measurable amount of power. Also, avoid using the power outlet near where such appliances are plugged into. This may cause voltage reduction and malfunction.

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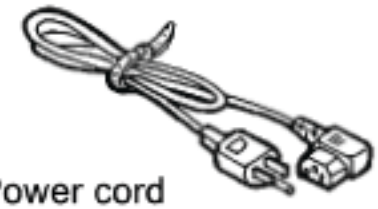
ACCESSORIES

Make sure that you have received all of the following items in the package. If there are any accessories missing, contact your SATO reseller or technical support center.

Leaflet (Global warranty)

Quick Guide (this manual)



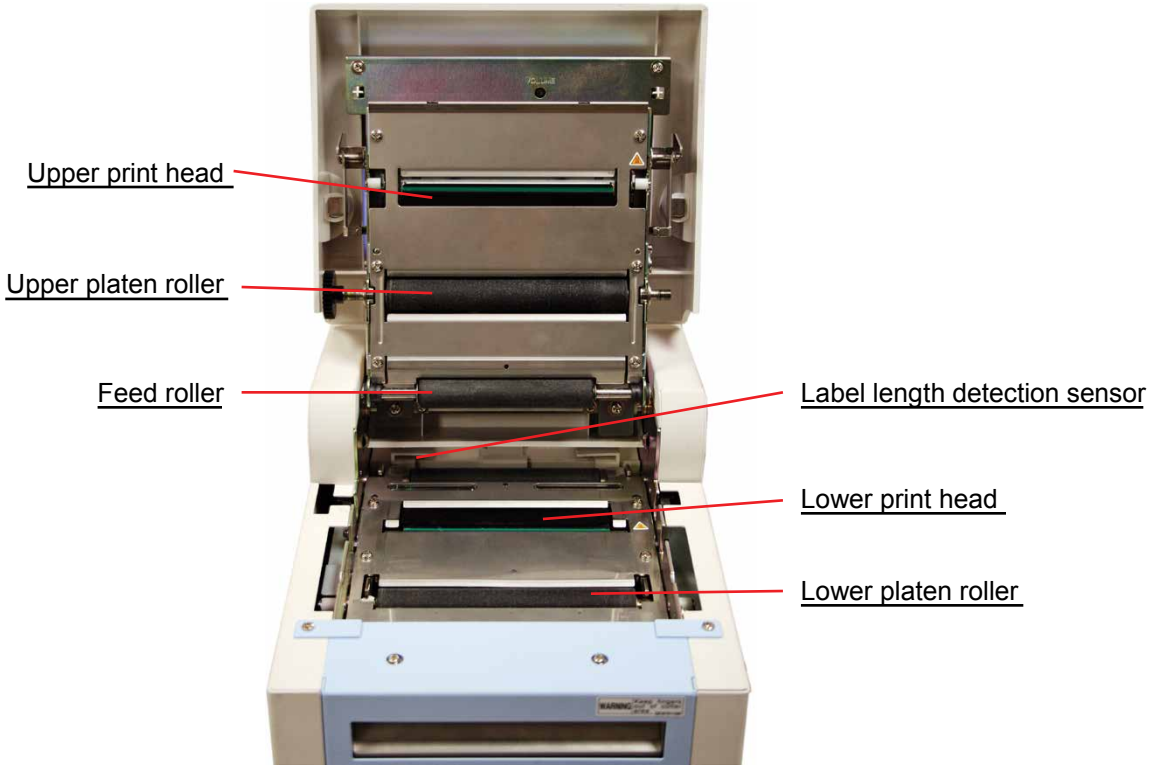
Power cord

ABOUT THE BOX

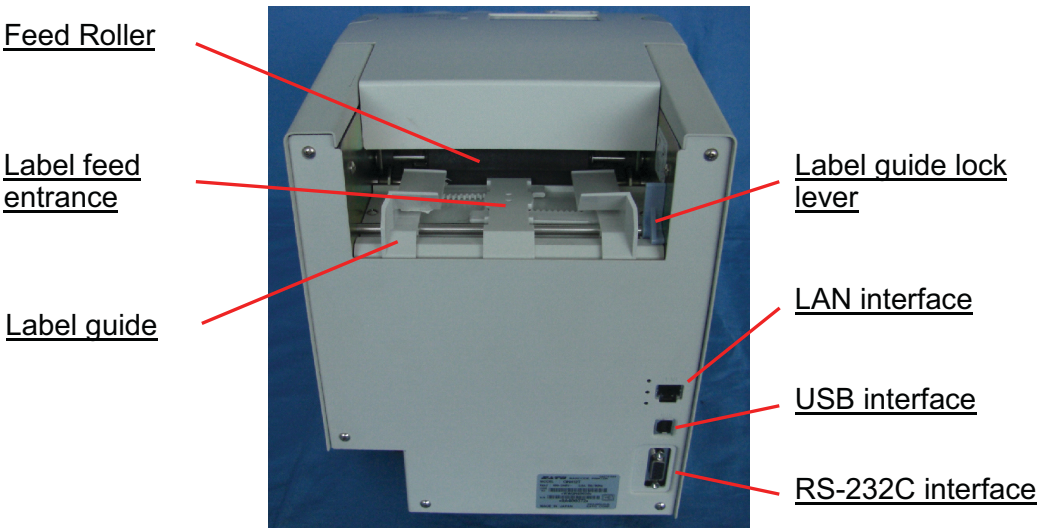
Please retain both the box in which the printer was packed, and the cushioning material (cushions that hold the printer in place). If you ever need to send in the printer for repair, repack it in this box.

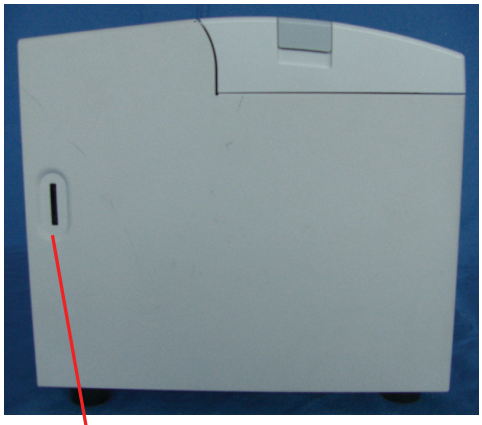
NAMES OF PARTS

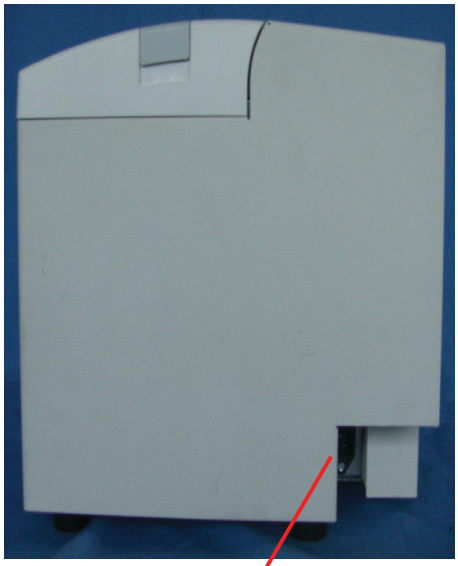
Front side of the printer



Back side of the printer



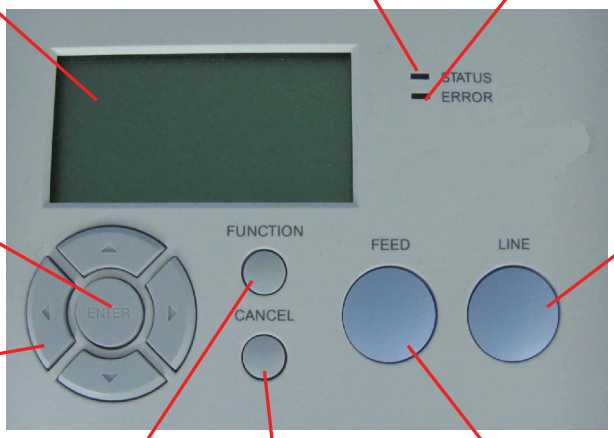




AC input connector
Connect the power cord to the printer here and plug its opposite end into the appropriate power receptacle.

OPERATOR PANEL

Icons, instructions, and error messages are displayed here.



Display panel
Displays icons, instructions and error messages.

STATUS LED
Green: The printer is in operation.
OFF: The printer operation is paused.

ERROR LED
Red light turns on or blinks when an error has occurred.

ENTER button
Registers set contents.

LINE button
Acts as the print start/stop toggle button. Acts as the data transmission ON/OFF toggle button.

Arrow buttons
Moves the cursor and enters the numeric value in various modes.

FEED button
Feeds the label. Press once to feed one blank label.

When the label is not at the right position after setting the label, press the LINE button to go offline, and then, press the FEED button to automatically adjust the label position to its top of form position.

FUNCTION button
Returns to the mode selection screen.

CANCEL button
Cancels print data. Returns to the previous screen.

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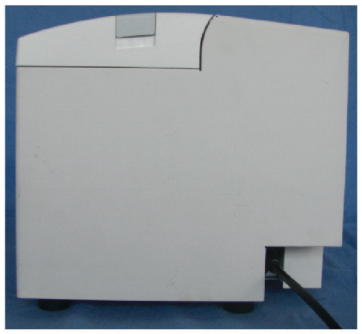
2

TURNING ON THE POWER

After installing the printer, connect the power cord as shown below.



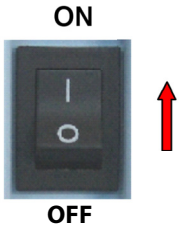
CAUTION

- The power cord set supplied with this printer is only for use with this printer. Do not use it for other electrical products.
- Do not operate the POWER button or plug in/unplug the power cord with wet hands or wet fingers. Doing so could result in electric shock.

1. To connect the power cord to the printer, be sure to confirm the correct orientation of the plug. Plug the power cord into the printer. Use your other hand to secure the printer when connecting the power cord.

2. A three-prong power cord is provided. If your power socket has three contacts, the third one is connected to the ground for safety. If your power outlet has two slots, use a three-prong to two-prong adapter.

3. Press the power switch to the direction of [|].



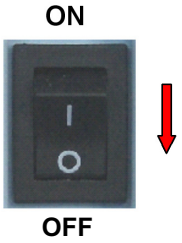
TURNING OFF THE POWER

CAUTION

- Do not operate the POWER button or plug in/unplug the power cord with wet hands. Doing so could result in electric shock.

1. Ensure that the printer is in offline mode before you turn off the power. If the printer is in online mode, press the LINE button to go offline.

2. After an [OFFLINE] message is displayed on the LCD screen, press the power switch toward [o].



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BASIC SPECIFICATIONS

Model name	GY412
Printing method	Direct Thermal
Head density (resolution)	305 dpi (12 dots/mm)
Printable area	4.09” wide x 11.81” pitch (104 mm wide x 300 mm pitch)
Unprintable area	**Length direction:** Upper: 0.05” (1.5 mm) Lower: 0.05” (1.5 mm) **Width direction:** Left: 0.05” (1.5 mm) Right 0.05” (1.5 mm) These measurements do not include backing paper.
Printing speed	3 to 10 inches per second (75 or 120 mm/second) (Setting value: 3, 4, 5, 6, 7, 8, 9, 10) Some restriction may apply to the print speed, depending on the layout and the label type.
Label type /label shape	Fanfold label (Maximum folded height: 5.11”/130 mm). We recommend using label manufactured or specified by SATO.
Label thickness	100 to 320 µm 0.003 to 0.012” (0.1 to 0.32 mm)

Model name	GY412
Label size	**Label size** **Continuous type** Pitch: 1.18 to 11.81 in./30 to 300 mm. (Backing paper 1.29 to 11.9 in./33 to 303 mm) Width: 1.96 to 5.15 in./50 to 131 mm.(Backing paper 2.04 to 5.19 in./ 50 to 132 mm.) 22 to 107 mm (Backing paper 25 to 110 mm) **Tear-off type** Pitch: 1.18 to 11.81 in./30 to 300 mm. (Backing paper 1.29 to 11.9 in./33 to 303 mm. Width: 1.96 to 5.15 in. / 50 to 131 mm. (Backing paper 2.04 to 5.19 in./ 50 to 132 mm. **Cutter type** Pitch: 1.18 to 11.81 in./ 30 to 300 mm. (Backing paper 1.29 to 11.9 in./30 to 303 mm.) Width: 1.96 to 5.15 in./50 to 131 mm. (Backing paper 2.04 to 5.19 in./52 to 132 mm Some restrictions may apply to the label size, depending on the print quantity, label type, and usage environment.
Label issuing mode	Continuous mode, Tear off mode, Cutter mode
Dimensions	8.38” (W) x 11.92”(D) x 11.06” (H) 213 (W) x 303 (D) x 281 (H) mm.
Weight	29.76 pounds; Approximately 13.5 kg
Power specifications	Input power voltage: AC 100V to 240V +/-10% Power consumption At peak: 140 W 140VA (at 30% print ratio) During standby: 11 W 14VA
Environmental conditions (temperature and humidity)	Operating environment: 32 to 104°F / 0 to 40°C 30 to 80% RH (However, no condensation) (These ranges do not include labels and other supplies.)

Model name	GY412
Interface	Select one of the following (The factory will provide the unit with the selected interface.) 1. USB interface 2. LAN interface 3. RS-232C interface 4. SD card slot (1 slot)
Options	Cutter unit, SD card
Operation buttons	LINE, FEED, ENTER, FUNCTION, CANCEL
Level adjustment	Print darkness adjustment, Print position adjustment, tear-off position adjustment, Cut position adjustment
Label length detection	I-mark sensor (Reflective type) Gap sensor (Transmissive type)
Barcode	UPC-A/UPC-E, JAN/EAN, CODE39, CODE93, CODE128, GS1-128 (UCC/EAN-128), CODABAR (NW-7), ITF, Industrial 2 of 5, Matrix 2 of 5, Customer Barcode, UPC Add-On Code, GS1 DataBar Omnidirectional, GS1 DataBar Truncated, GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional, GS1 DataBar Limited, GS1 DataBar Expanded, GS1 DataBar Expanded Stacked. GS1 DataBar is the new version of RSS.
2D code	QR code, Micro QR, PDF417, Micro PDF, MAXI code, GS1 DataMatrix (ECC200)
Composite symbol	EAN-13 Composite EAN-8 Composite UPC-A Composite UPC-E Composite GS1 DataBar Composite GS1 DataBar Truncated Composite GS1 DataBar Stacked Composite GS1 DataBar Stacked Omni-Directional Composite GS1 DataBar Limited Composite GS1 DataBar Expanded Composite GS1 DataBar Expanded Stacked Composite GS1-128 Composite GS1 DataBar is the new version of RSS. GS1-128 is the new version of UCC/EAN128.
Standard installed fonts	

Model name	GY412
Bitmap font	X20 5x9 dots (alphanumeric, symbols, Katakana) X21 17 x 17 dots (alphanumeric, symbols, Katakana) X22 24 x 24 dots (alphanumeric, symbols, Katakana) X23 48 x 48 dots (alphanumeric, symbols, Katakana) X24 48 x 48 dots (alphanumeric, symbols, Katakana)
	OCR-A 22 x 33 dots (alphanumeric and symbols) OCR-B 30 x 36 dots (alphanumeric and symbols) Kanji 16 x 16 dots (JIS level 1&2) Gothic-pointed /Mincho type Kanji 22 x 22 dots (JIS level 1&2) Gothic-pointed /Mincho type Kanji 24 x 24 dots (JIS level 1&2) Gothic-pointed /Mincho type Kanji 32 x 32 dots (JIS level 1&2) Gothic-pointed /Mincho type Kanji 40 x 40 dots (JIS level 1&2) Gothic-pointed /Mincho type Japanese (JIS X 208-compliant)
	Simplified Chinese (2.6 MB) Gothic type GB2312 24 x 24 dots
	Korean (1.6 MB) Gothic type KSX1001 16 x 16 dots Mincho type KSX1001 24 x 24 dots
Rasterized font	CG Times (alphanumeric and symbols) CG Triumvirate (alphanumeric and symbols)
Outline font	Kanji, Alphanumeric, symbols, Katakana
Printing direction (Characters and barcodes)	Characters: 0°, 90°, 180°, 270° Barcodes: Parallel 1 (0°), Parallel 2 (180°), Serial 1 (90°), Serial 2 (270°)
Barcode ratio	1:2, 1:3, 2:5, User definable
Magnification ratio (Characters and barcodes)	Characters: Vertical 1 to 12 times, horizontal 1 to 12 times Barcode: 1 to 12 times

Model name	GY412
Standard functions	1. Status return function 2. Graphic function 3. Sequential number function 4. Form overlay function 5. Custom character registration function 6. Character adjustment function 7. Black/white inversion function 8. Ruled line function 9. Dump list function 10. Format registration function 11. Outline function 12. Outline modification function 13. Label skip function 14. Zero slash switching function 15. JIS/Shift JIS switching function 16. Auto loading function 17. Label saving function 18. Label discharge function
Self-diagnostic function	1. Broken head element check 2. Paper end detection 3. Cover (head) open detection 4. Test print 5. Cutter error (When the cutter kit is installed)
Noise (EMC) standard	FCC Class B

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This product is manufactured under Patent No. 6, 784, 906.
SD logo is a trademark.

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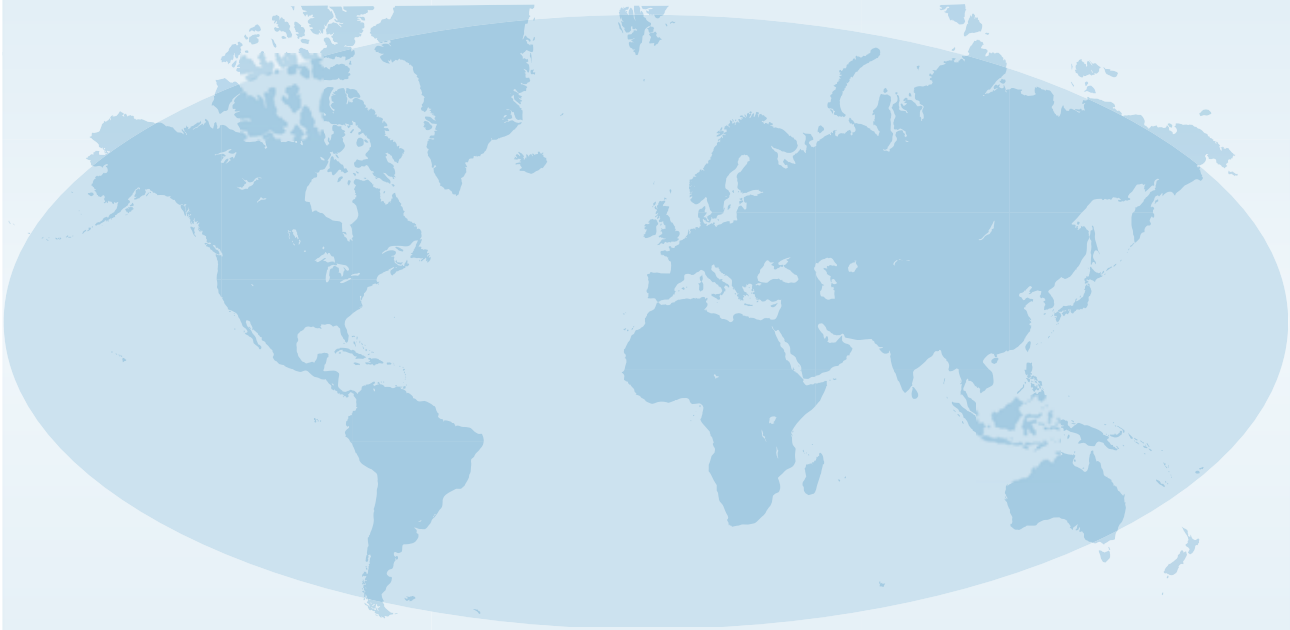
4

SATO GROUP OF COMPANIES



Extensive contact information of worldwide SATO operations can be found on the Internet at **www.satoworldwide.com**